



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/765,383

01/22/2001

Alex Dolgonos

7112

1036

7590

05/26/2005

Josefino P. DeLeon  
Shlesinger, Arkwright & Garvey L.L.P.  
1420 King Street  
Suite 600  
Alexandria, VA 22314

EXAMINER

SCHEIBEL, ROBERT C

ART UNIT

PAPER NUMBER

2666

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/765,383	<b>Applicant(s)</b> DOLGONOS ET AL.	
	<b>Examiner</b> Robert C. Scheibel	<b>Art Unit</b> 2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,7,12-19,21 and 23-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7,12-19,21,23-31,35 and 40 is/are rejected.
- 7) ☒ Claim(s) 32-34,36-39 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see the section entitled "Claim Rejections – 35 U.S.C. 112" on page 13, filed 12/27/2004, with respect to the rejection of claim 6 under 35 U.S.C. 112 have been fully considered and are persuasive. The rejection of claim 6 under 35 U.S.C. 112 has been withdrawn.

2. Applicant's arguments, see the section entitled "Claim Rejections – 35 U.S.C. 102" on pages 13-16, filed 12/27/2004, with respect to the rejection of claims 1-3, 5, 7-8, 12-13, and 20-25 under 35 U.S.C. 102(e) have been fully considered but they are not persuasive. In the first two paragraphs of this section, applicant summarizes the rejection and the amendments made to independent claims 1 and 21. In the next paragraph (on page 14), applicant again summarizes the changes to claims 1 and 21 and asserts that as these limitations of OFDM symbols being transmitted to the hub station are now in all independent claims, these claims are allowable. Examiner disagrees for reasons explained in more detail below. The next paragraph (on pages 14-15) contains the heart of applicant's argument. Applicant begins with the argument that the receiver of Figure 3 of Brink is indicated as being located in the mobile units 22 and base stations 16, citing a specific passage of Brink. While it is true that the passage in columns 5 and 6 indicates that the transmitter and receiver circuitry of Figures 2 and 3 can be located in the mobile unit or base station, this passage clearly refers to a specific embodiment. Brink also indicates that portions of the receiver circuitry can also be included in the MSC in some embodiments (see lines 2-7 of column 7). Applicant that argues that Brink does not explicitly disclose the use of OFDM signals being relayed from the base stations to the MSC. However,

Art Unit: 2666

Brink clearly suggests this throughout with the discussion of combining the symbols at the MSC.

The passage in lines 14-19 of column 6, which indicates that the base station “collects” the received signals and sends them to the MSC to be combined, combined with the teaching of lines 28-30 of column 8 clearly implies that this can be multiple sub-carrier symbols or OFDM.

Applicant then notes that the passage from lines 28-30 of column 8 refers to multiple sub-carrier CDMA rather than OFDM. While this may be true, examiner asserts that this is simply a matter of semantics and that it is well known in the art that multiple sub-carrier CDMA is simply a variation on OFDM. While Brink doesn’t explicitly state this, it is suggested in lines 42-56 of column 1 and lines 5-9 of column 2. In the first paragraph of page 16, applicant again states that in the context of OFDM symbols, Brink discloses embodiments in which OFDM symbols are demodulated in the base stations rather than at a central station and thus teaches away from the present invention. While examiner agrees that this may be the case in a particular embodiment, Brink clearly suggests other embodiments as discussed above.

3. Applicant's arguments, see pages 17-18, filed 12/27/2004, with respect to the rejection of claim 4 under 35 U.S.C. 103(a) have been fully considered but they are not persuasive.

Applicant begins by summarizing the claimed limitations of claim 4 and their benefits.

Applicant then argues that since the only example of the type of network element 20 is in Brink is the PSTN, that Brink cannot be modified to support the bandwidth for electronic news gathering. However, Brink clearly discloses element 20 generically as a “network” and does not limit it to the PSTN. Applicant then summarizes part of Hurwitz citing the types of wireless connections to the electronic news gathering equipment suggested in the text. Applicant argues that since Hurwitz does not suggest the use of OFDM or multiple base stations, there is no

Art Unit: 2666

motivation to combine the two references. However, examiner respectfully disagrees. Examiner is not relying on Hurwitz for the OFDM limitations of the present invention. As indicated in the original office action, Hurwitz teaches the electronic news gathering limitations of claim 4 and provides motivation for combining this with Brink. Therefore, the previous rejection is maintained.

4. Applicant's arguments, see pages 18-19, filed 12/27/2004, with respect to the rejection of claims 27-28 under 35 U.S.C. 103(a) have been fully considered but they are not persuasive. Applicant begins by summarizing the limitations of claim 27. Applicant then argues that the single DFT of Brink does not disclose the limitation of separate DFTs for the OFDM symbols received from at least some of the base stations. Applicant argues that an embodiment of Brink in which OFDM symbols are received at the MSC also does not disclose the limitations of claim 27. However, examiner respectfully disagrees; the MSC would have to separately receive the symbols on the individual links from the different base stations and it would thus be obvious to implement part or all of the receiver taught in figure 3 for each link to the MSC, thus disclosing the invention as specified in claim 27.

5. Applicant's arguments, see pages 19-20, filed 12/27/2004, with respect to the rejection of claims 19 and 29-30 under 35 U.S.C. 103(a), have been fully considered but they are not persuasive. Applicant starts by summarizing the additional limitations added in these claims. Applicant then notes that Paulraj discloses the processing of training symbols at the base stations rather than the hub station. However, examiner respectfully disagrees. In the embodiments of Brink clarified above, the concept of receiving the OFDM symbols at the hub station has already been disclosed. Paulraj is relied upon for the teaching that the training symbols are used to

Art Unit: 2666

determine if the base station has received transmission from the wireless transmitter. For example, in the case in Brink where the signals from the mobile unit are “collected” at the base station and then combined at the MSC, the teaching of Paulraj can clearly be used to obtain the invention as claimed in claims 19 and 29.

6. Applicant's arguments, see page 20, filed 12/27/2004, with respect to the rejection of claims 31 under 35 U.S.C. 103(a), have been fully considered but they are not persuasive. Applicant generally argues that based on the arguments regarding Brink not disclosing the limitations of the independent claims, the rejection of claim 31 should be reconsidered. Examiner disagrees as stated above. Applicant further argues that there is no motivation to combine the three references used in the rejection. Examiner disagrees and refers applicant to the original office action and the rejection below for a detailed explanation of the motivation to combine these references.

7. Applicant has commented on the content of the new claims added to the application. As indicated below, claim 35 has been rejected under 35 U.S.C. 103(a). Claim 40 has been rejected under 35 U.S.C. 112, second paragraph. The remaining claims (33-34 and 36-39) have been objected to as depending on rejected claims as they contain subject matter similar to claim 32 which was objected to in the previous office action.

8.

#### *Claim Objections*

9. Claim **40** is objected to because of the following informalities: the phrase “the hub station including” on lines 1-2 should be changed to “the hub station includes”. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim **40** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 40 recites the limitation "the processing chains" in line 5. There is insufficient antecedent basis for this limitation in the claim. This rejection can be overcome by changing the above cited limitation to "the processing circuits".

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims **1-2, 5, 7, 12-13, 21, and 23-25** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,038,450 to Brink et al.

Regarding claims **1, 12, 21, and 23**, Brink discloses the limitation of a wireless transmitter configured to transmit a data signal using multiple sub-carriers in the mobile units 22

Art Unit: 2666

of figure 2. Each of these transmitters is configured to transmit a data signal as successive OFDM symbols (see claim 12) as described by Brink in lines 12-21 of column 5. Brink discloses a plurality of base stations each configured to receive the multiple sub-carrier data signal and relay the multiple sub-carrier data signal to a hub station in the BSns 16a-c of Figure 1. The hub station is the MSC 18 of Figure 1 as will be described in more detail below.

Regarding the additional limitation of claim 12 that the base stations are configured to receive OFDM symbols, Brink discloses this limitation from line 61 of column 5 through line 3 of column 6. In addition, the limitation that at least some of said base stations having overlapping coverage areas such that more than one base station can receive OFDM symbols from the same mobile transmitter is disclosed in lines 14-19 of column 6. The limitation of a hub station configured to receive and combine the multiple sub-carrier data signals from the plurality of base stations is disclosed in the MSC 18 of Figure 1 and described in lines 14-19 of column 6. The additional limitation of claim 12 that the hub station receive OFDM symbols from the base stations and demodulate the symbols and output an estimate of the data signals from the wireless transmitters is anticipated by Brink in the passages from lines 14-19 of column 6 and lines 28-30 of column 8. The passage from column 8 discloses sending OFDM symbols (multiple sub-carrier symbols) from the receiver in the base station (to the hub (MSC)). The hub (MSC) will inherently need to demodulate these symbols in order to be able to transmit them to the PSTN network. Further, the passage from column 6 indicates that the MSC will combine the symbols from multiple base stations (originating at the same mobile unit) and thus output an estimate of the signal sent by the originating mobile unit to the PSTN.



Regarding claim 2, Brink discloses the limitation that the hub station (MSC) is configured to treat the signals received from the multiple base stations as multipath components in lines 38-40 of column 3 and 14-19 of column 6. The first passage indicates how the mobile unit combines the multiple signals by treating them as multipath components and the second passage indicates that the same combination of these signals in the uplink is done in the hub station (MSC) in an embodiment.

Regarding claims 5, the limitation that at least some of the base stations are connected to the hub station by wired communications links in lines 14-17 of column 4.

Regarding claim 7, the limitation that the system includes a plurality of wireless transmitters is disclosed in the multiple mobile units 22 of figure 1 described in lines 28-34 of column 4.

Regarding claims 20, the limitation that at least some of the wireless transmitters transmit data signals substantially simultaneously, each using a unique set of sub-carriers in lines 60-64 of column 4.

Regarding claim 13, the limitation that the hub station is configured to combine signals received from multiple different base stations is disclosed in lines 14-19 of column 6.

Regarding claim 22, the limitation of outputting at the hub station, based on the combined data signals from the plurality of base stations, an estimate of the signals transmitted from the mobile wireless transmitter is disclosed in the passages from lines 14-19 of column 6 and lines 28-30 of column 8. The passage from column 8 discloses sending OFDM symbols (multiple sub-carrier symbols) from the receiver in the base station (to the hub (MSC)). The passage from column 6 indicates that the MSC will combine the symbols from multiple base stations

Art Unit: 2666

(originating at the same mobile unit) and thus output an estimate of the signal sent by the originating mobile unit to the PSTN.

Regarding claim 24, Brink discloses the limitation that the hub station is configured to perform a discrete Fourier transform on a sum of the OFDM symbols received from the base stations in the DFT 72 of Figure 3 and lines 15-17 of column 7. It is clear that the hub station (MSC) would have to have a receiver somewhat similar to that of Figure 3 to properly receive the OFDM symbols sent from the base stations.

Regarding claim 25, Brink discloses the limitation that each of the base stations is connected to the hub station by a substantially independent communications link in Figure 1 where each of the links 30 appear to be separate (independent) wired links.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

Art Unit: 2666

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,038,450 to Brink et al in view of U.S. Patent 5,568,205 to Hurwitz.

Brink discloses all the limitations of the parent claim 1 as indicated in the rejection above. Brink does not disclose expressly the limitations of claim 4. Hurwitz discloses an electronic news gathering system (see lines 34-50 of column 2), including a video camera and audio transducer (see element 17 of Figure 2) coupled to the wireless transmitter (element 82 of Figure 5), the wireless transmitter being configured to receive video and audio signals from the video camera and audio transducer for inclusion in the data signal (see Figures 2 and 5). Brink and Hurwitz are analogous art because they are from the same field of endeavor of wireless transmission of audio and video. At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the mobile unit of Brink to transmit audio and video as described in Hurwitz. The motivation for doing so would have been to allow remote news gathering as suggested by Hurwitz in lines 11-26 of column 1. Therefore, it would have been obvious to combine Hurwitz with Brink for the benefit of remote news gathering to obtain the invention as specified in claim 4.

9. Claims 17-18, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,038,450 to Brink et al in view of U.S. Patent 5,742,907 to Brown.

Art Unit: 2666

Brink discloses all the limitations of the parent claims 8 and 12 as indicated in the rejection above. Brink does not disclose expressly the limitations of claims 9-10 and 17-18. Brown discloses the limitation that wireless transmitters each include a receiver for receiving a reference signal to synchronize operation of the wireless transmitters in the GPS reference clock of sites s1 and s2 of figure 2. Brown further discloses the limitation that the reference signal receiver is a Global Positioning System (GPS) receiver in figure 2 as well. Brink and Brown are analogous art because they are from the same field of endeavor of wireless communications. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Brink by adding a GPS receiver to the mobile units to produce a reference signal for synchronization. The motivation for doing so would have been to synchronize the transmitters to a common reference as suggested in the abstract. Therefore, it would have been obvious to combine Brown with Brink for the benefit of synchronizing to a common reference to obtain the invention as specified in claims 9-10 and 17-18

10. Claims **14-16 and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,038,450 to Brink et al in view of U.S. Patent Application Publication 2001/0004379 to Wilson.

Brink discloses all the limitations of the parent claims 13 and 25 as described in the rejection above. Brink does not disclose expressly the limitations of claims 14-16 and 26. Wilson discloses the limitation of claim 14 of the hub station being configured to sum the OFDM symbols received from the base stations prior to demodulating the OFDM symbols in figure 2. Wilson discloses the limitation of claims 15 and 26 of the links from the base stations to the hub

Art Unit: 2666

station having predetermined propagation delays and the hub stations including buffering to eliminate the delay spread prior to combining in paragraphs 10-12 on page 1. Wilson also discloses the limitation of claim 16 of hub station being configured to adaptively combine the signals received from each of the base stations based on measured signals characteristics in paragraphs 14 and 15 on page 1, where the phase rotation is the signal characteristic. Brink and Wilson are analogous art because they are from the same field of endeavor of wireless communications systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the concepts of Wilson to combine the signals in the hub station (MSC) of Brink. The motivation for doing so would have been to avoid extra memory as suggested by Wilson in paragraph 11 on page 1. Therefore, it would have been obvious to combine Wilson with Brink for the benefit of reduced memory requirements to obtain the invention as specified in claims 14-16 and 26.

11. Claims **27-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,038,450 to Brink et al.

Brink discloses all the limitations of the parent claim 25 as described in the rejection above. Brink does not explicitly disclose the limitations of claims 27 and 28. However, in Figure 3, Brink discloses a receiver which performs a discrete Fourier transform (DFT 72) and then later combines the transformed symbols (combiners 82) which as specified in lines 13-15 of column 8 can be multipath versions of the same sub-carriers. Brink further discloses the limitation of claim 28 that the hub station is configured to combine the transformed symbols based on noise characteristics of signals received from the independent wired links in lines 57-62

Art Unit: 2666

of column 2. It would have been obvious to one of ordinary skill in the art to apply the same concepts to the receiver/combiner in the hub station (MSC) so that the symbols are first transformed and then combined. The motivation for doing so would have been to combine symbols from multiple base stations as suggested by Brink in lines 14-19 of column 6.

Therefore, it would have been obvious to modify Brink to obtain the invention as specified in claim 27.

12. Claims **19 and 29-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,038,450 to Brink et al in view of U.S. Patent Application Publication 20020027957 to Paulraj.

Brink, modified, discloses the limitations of claims 12 and 27 as described in the rejection above. Brink does not disclose expressly the limitations of claims 29-30.

Paulraj discloses the limitation of the wireless data signals including training symbols in the training patterns of figure 10a, 10b, and 11. Paulraj discloses the limitation that these training signals are used to determine which base stations have received a transmission using the training symbols in paragraph 30 on pages 2-3 which indicates that the training patterns are distinguishable by the receiver (the hub station) and thus could be used to determine if a particular transmitter's signal has been received at a given base station. Paulraj further discloses the limitation of claim 30 that the training symbols are predetermined pseudo-random symbols in paragraph 9 on page 6; it is well known that Walsh codes are predetermined pseudo-random symbols. Brink and Paulraj are analogous art because they are from the same field of endeavor of wireless communications systems. At the time of the invention, it would have been obvious to

Art Unit: 2666

one of ordinary skill in the art to modify Brink by using the training patterns as indicated by Paulraj for the benefit of improving interference mitigation (as specified by Paulraj in the abstract) to obtain the invention as specified in claims 19 and 29-30.

13. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,038,450 to Brink et al in view of U.S. Patent Application Publication 20020027957 to Paulraj and in further view of U.S. Patent Application Publication 20030195017 to Chen et al.

Brink, modified, discloses the limitations of claim 29 as described in the rejection above. Brink does not disclose expressly the limitations of claim 31. Chen discloses the limitation of claim 31 of the training symbols comprise OFDM symbols having predetermined characteristics distinguishable from OFDM symbols used to transmit useful data, the hub station being configured to determine the presence of the training symbols by determining if the signal power of sub-carriers associated with the at least one wireless transmitter exceed a threshold value in the threshold T\_ADD of paragraph 9 on page 1. Brink and Chen are analogous art because they are from the same field of endeavor of wireless communications systems. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Brink to use a threshold on the pilot signal to determine the presence of a transmitter. The motivation for doing so would have been to properly establishing and tearing down the backhaul channels in a soft handoff as suggested by Chen in paragraph 9 of page 1. Therefore, it would have been obvious to combine Chen with Brink, modified, for the benefit of properly handling the backhaul channels in a soft handoff to obtain the invention as specified in claim 31.

Art Unit: 2666

14. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,038,450 to Brink et al.

Brink discloses all the limitations of the parent claim 12 as described in the rejection above. Brink does not explicitly disclose the limitations of claim 35. However, as disclosed in the above rejection of claim 12, Brink clearly discloses combining the symbols from multiple base stations (see lines 14-19 of column 6 for example). Brink further discloses the use of a summer (adder) in combining the symbols (see lines 10-12 of column 6 for example). As stated above, it would certainly be necessary for the MSC to perform some demodulation when receiving the OFDM symbols. It would have been obvious to one of ordinary skill in the art to have receiving circuitry for each link to the hub station (MSC), as this would be necessary to receive the signals from the multiple base stations in parallel. The motivation for doing so would have been to combine the symbols from multiple base stations for the purpose of implementing the soft handover as suggested throughout Brink (see lines 14-19 of column 6 for example). Therefore, it would have been obvious to modify Brink to obtain the invention as specified in claim 35.

***Allowable Subject Matter***

15. Claims 32-34 and 36-39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



Art Unit: 2666

16. Claim **40** would be allowable if rewritten to overcome the rejection under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert C. Scheibel whose telephone number is 571-272-3169. The examiner can normally be reached on Monday and Thursday from 6:30-5:00 Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2666

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*RCS 5-19-05*

Robert C. Scheibel  
Examiner  
Art Unit 2666

*Seema S. Rao 5/25/05*  
SEEMA S. RAO

SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600